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## ORIGINAL ARTICLES

### THE BENIGN CERVIX WITH SPECIAL REFERENCE TO TREATMENT BY CAUTERY\*

I. H. NOYES, M.D., F.A.C.S.

AND

ANTHONY CORVESE, M.D.

PROVIDENCE, R. I.

Disease of the uterine cervix may occur at almost any period of life. Before puberty it is relatively uncommon however and malignancy is exceedingly rare.

After the sixth decade of life there is an abatement of cervical disease, both benign and malignant, due probably to regressive changes following the menopause. This leaves a period of approximately 45 years with which we are chiefly concerned when considering our present subject.

Inasmuch as the vast majority of benign cervical lesions originate from infection or trauma, the reason for their preponderance during the active sexual and reproductive years is obvious.

If, as has long been believed, there is any casual relationship between chronic irritation or infection and cancer, it is not surprising that the cervix is one of the most frequent sites of malignant disease for certain it is that on no other portion of the body would woman tolerate any such advanced and offensive diseased process as is here frequently observed without making some serious attempt to have it cured or removed. It is indeed unfortunate for the success of the crusade for the prevention and early recognition of cervical cancer that this simple anatomical structure occupies such an inconspicuous position in the female body.

The character of the lesions encountered varies according to their etiology, the nature and duration of the infection and the extent of the trauma.

The gross appearance frequently differs considerably in the nulliparous and the parous, a cir-

cumstance not remarkable as in one we are usually dealing with a single factor, infection, while in the other, though we may be concerned with trauma alone, more often both trauma and infection play a part.

In the non-parous the process most frequently observed is a chronic endocervicitis due to gonorrheal infection and characterized by an excessive mucopurulent discharge. In more advanced stages the presence of the irritating discharge causes erosion of the mucous membrane surrounding the external os and infection transforms some of the cervical glands into small yellowish white follicles which are visible immediately beneath the overlying epithelium.

It must not be concluded however that all cases of endocervicitis in the non-parous are due to gonorrheal infection as numerous instances are met with in young women whose virginity can be fairly well proven. In such the etiology is often obscure but occasionally their origin can be traced to a vaginitis, specific or otherwise, which occurred during childhood.

In parous women a wide variety of diseased conditions of the cervix exists. Perhaps the simplest of these is one frequently observed a few weeks or months postpartum where a minor laceration has resulted in slight eversion of the lips with exposure of the endocervical mucous membrane to the vaginal secretions and without apparent infection. Between this simple lesion and the enormously hypertrophied, eroded and infected cervix all grades are seen, a description of which would be time consuming and unnecessary.

To enumerate the various methods which have been employed in the treatment of these conditions would necessitate a review of a considerable portion of the history of gynecology from the time of complete reliance upon depletory measures and the application of caustics to the trachelorrhaphy devised by Emmet and later the operation of amputation down to the tracheloplasty of Sturmdorf, the application of small doses of radium and the use of the actual cautery.

\*Read at the 115th Annual Meeting of the Rhode Island Medical Society, Providence, June 3, 1926.

That much can be accomplished toward improving the condition of a cervix showing minor erosions or slight infection by the application of antiseptics and the use of medicated tampons must be admitted by those who have had experience with such measures. If however laceration has so altered the anatomy that there is marked eversion of the endocervical mucosa or if infection has already gained access to and produced characteristic changes in the glands and surrounding tissues, the improvement will seldom be more than temporary.

Simple trachelorrhaphy, if performed early and in the absence of infection, is an exceedingly valuable prophylactic procedure. It may be done immediately after the occurrence of the laceration at delivery if surroundings and assistance are such as to insure a satisfactory aseptic technique or as an intermediate repair as has long been advised and practised by Dr. B. C. Hirst or as an early secondary operation. On the other hand if repair is delayed until chronic hyperplastic and glandular changes have taken place the procedure fails to give satisfactory results as only a portion of the diseased tissue is removed.

Realization of this fact served to increase the popularity of the amputation which soon became the method of choice. Indiscriminate use of this operation, often done at high level during the child-bearing period, was naturally followed by many bad results. Failure to obtain accurate approximation of flaps frequently caused a persistent leucorrhea, sterility seemed to be increased and many of those who became pregnant either miscarried or suffered dystocia at delivery. In a number of instances Cesarean section had to be performed on account of the inability of the cervix to dilate.

Appreciating the importance of cervical infection as a cause of pelvic pathology but realizing both the inadequacy of trachelorrhaphy and the disadvantages of amputation Sturmdorf devised a most ingenious plastic operation, discussed by him before this society three years ago, whereby the diseased endocervix is removed by excising a cone of tissue and the resulting cavity relined with a cuff of mucous membrane dissected free from the portio vaginalis, thus accomplishing the purpose

of the amputation without shortening or weakening the cervix to any great extent.

This procedure has revolutionized the operative treatment of cervicitis and Sturmdorf's articles have done much to recreate an interest in the pathology of the disease.

The use of small amounts of radium in the treatment of endocervicitis as suggested by Curtis is not likely to meet with general favor at present on account of its comparative scarcity, the lack of exact knowledge regarding proper dosage for women in the child bearing age and the danger connected with its use in the presence of pelvic inflammation.

Kennedy in 1921 described a method of treatment by which two or three cubic centimeters of 25% alcohol are injected into the interstitial tissues of either lip in a direction parallel to the cervical canal. He claimed for it excellent results in mild cases.

The value of the cautery in the treatment of benign cervical lesions though by no means unknown was brought anew to the notice of the profession by Hunner in 1906. Since then R. L. Dickenson has clearly stated what he believes are its indications but his technic differs considerably from that proposed by Hunner.

During the past few years gynecologists have shown a renewed interest in the method and a great number of articles on it have appeared in American and foreign journals. Those in charge of the program for the section in gynecology and obstetrics at the recent meeting of the American Medical Association considered the subject of cervical disease of sufficient importance to arrange for a symposium in which papers dealing with treatment by cautery were given due prominence.

Our own experience with the method has now extended over a period of about three years during which cases of various types have been treated. In going over our records we find that they seem to fall into three main groups.

1. The mild or moderately advanced cases of endocervicitis usually gonorrheal in origin presenting on examination a greater or less degree of mucopurulent cervical discharge with or without some eversion, superficial erosion or slight hypertrophy. These patients were for the most part nulliparous.



2. Parous women who have suffered laceration of the cervix with resultant eversion and hyperplasia of the exposed mucosa. Frequently there exists in addition some degree of infection, cystic degeneration or hypertrophy.

3. Those exhibiting advanced stages of chronic cervical infection with extensive erosion, cystic disease and hypertrophy.

In deciding upon the method of treatment one must be governed largely by the nature and extent of the lesion. As it is impossible to make a positive diagnosis of very early malignant disease of the cervix by either sight or touch, any lesion that looks at all suspicious of cancer should be treated by other means than the cautery. We can not emphasize this point too strongly.

In instances where the disease is of long standing and there is marked hypertrophy with deep seated infection or extensive cystic degeneration particularly if the patient is approaching or past the menopause amputation or the Sturmdorf operation should usually be chosen.

If the process is somewhat less advanced and the patient is in the child-bearing age a mild cauterization of the canal-lining combined with Hunner's technic of making several deep radial incisions under anesthesia will rid the cervix of disease and restore it almost to normal.

This method of procedure is an exceedingly valuable one as a preliminary to laparotomy for pelvic inflammatory disease especially when gonorrheal in origin as, if omitted, an infective focus still remains regardless of how radical the intra-abdominal work may be.

In cases demanding hysterectomy the preliminary cauterization may be as complete as desired for stenosis in such instances has no disadvantage. Even in the presence of advanced stages of benign cervical disease an extensive cauterization of this sort permits the surgeon to perform the less dangerous operation of supravaginal excision of the uterus in place of complete hysterectomy with very slight probability of cancer developing in the remaining stump.

Simple postpartum lesions, mild chronic gonorrheal infections and the superficial erosions occurring in the virgin can frequently be treated in the office without anesthesia but if cervical dilatation is necessary anesthesia is essential to success and

in the virgin is usually desirable for obvious reasons.

When done as an office procedure the Dickenson technique or some modification thereof is usually carried out. This consists of exposing the cervix, grasping one lip with a bullet forceps, cleansing and drying the diseased surfaces and making the desired number of stripes with a light cautery tip. The process is repeated at intervals of a few weeks until a satisfactory result is obtained.

A varying amount of discharge frequently blood tinged is usually the only annoying feature following the treatments and this is readily controlled by a daily douch. A moderate degree of hemorrhage has been reported as occurring occasionally when the slough separates in cases where the more extensive method has been employed but we have not met with such an instance.

In conclusion we wish to emphasize the importance of a careful postnatal examination six or eight weeks after delivery when the cervix can be thoroughly inspected and its condition accurately determined.

We feel certain that early treatment of erosions, eversions and mild infections will prevent the occurrence later of more serious lesions including some cases of cervical cancer and our experience has convinced us that in the cautery we have one of the safest, simplest and surest methods for their cure.

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#### Discussion.

DR. JAMES A. McCANN: I didn't know I was to discuss this very interesting and instructive paper this afternoon. I wish to thank Dr. Noyes and Dr. Corvese for the pleasure of hearing it.

In the great percentage of mothers with leucorrheal discharges who present themselves to us for examination we may find no abnormalities in the

uterine body or in the tubes and ovaries. The discharge is due to an uncomplicated endocervicitis. Curtis of Chicago studied many cases of chronic leucorrheal discharges with uncomplicated tubes and ovaries and proved conclusively that the inflammatory process did not extend above the internal os. A study of a number of uteri removed on our own service seemed to prove that in marked chronic endocervicitis of non-specific origin there was no inflammatory endometrial reaction of the uterine body.

I do not believe that these cases can be properly treated in one's office. The cervix should be well dilated and if cauterization is to be done, it should be done properly. In my opinion there is never any need of using a curet in the uterine body in any case of endocervicitis. The practice is really dangerous and can be of little if any value.

The only points which I wish to emphasize are these: In treating endocervicitis with the cautery in the child-bearing period, give the patient a general anaesthetic, cauterize, but keep a curet out of the body of the uterus.

DR. H. C. PITTS: I should like to compliment Dr. Noyes and Dr. Corvese on the work which they have done on this very important subject. It seems to me that we all see a large number of cases where examination shows tenderness in both fornices with dull pain in the pelvis. In this large class, the cervix is generally lacerated and infected. It has been my experience that they are relieved by proper application of the cautery. Until this past year, I had not been converted to the use of the cautery. Since using it, however, I find it has a very important field and certainly gives most satisfactory results. I think the work done has been most admirable.

DR. GEORGE W. WATERMAN: I should like to say a word about this subject. For the past year and a half or two years I have used the cautery at the Rhode Island Hospital Out-Patient Department and while I have great respect for what Dr. McCann says about the necessity of anesthesia where the cautery is to be applied, I think there is a large proportion of cases which can be successfully treated and greatly benefited without a general anesthetic. I think that many of the women who come in with a general run down nervous condition, backache and leucorrhea are very much benefited

by a few applications of the cautery, not attempting to do too much but getting what you think is the right amount of reaction. Within a week's time you see a remarkable improvement. I think it is a thing that many more of us who are doing this kind of work could take up and study with much benefit to our patients.

#### OBSERVATIONS ON THE HEALTH OF CHILDREN IN AN INSTITUTION.\*

WILLIAM P. BUFFUM, JR., M. D.

REUBEN C. BATES, M. D.

The following article shows the results of the survey of the children in an orphanage. It was thought that it would be interesting to see what the physical examination of a group of children in one of our best Rhode Island institutions would show. This was suggested to us by "Observations on the Health and Growth of Children in an Institution," by Holt and Fales<sup>1</sup> and "Health and Growth in an Institution," by Katz and Gray.<sup>2</sup>

The group studied was that of St. Mary's Orphanage in East Providence. It has been considered by those connected with this orphanage that the inmates have been unusually well and happy for institutional children. Their nutrition and color has appeared good and they have appeared to be lively and in good spirits.

##### The Institution:

The buildings are of wood, three stories high, and have ample light and ventilation. The children are separated into three main groups. 1. Infant Ward accommodating 16 infants up to three years of age. This section though accessible from the main building by a corridor is separate in every working detail. 2. Nursery Section taking children from three to six years of age, and accommodating 21 children. Here they have their own dining room, play room and piazza. The sleeping dormitory consists of 21 beds, one for each child. 3. The Industrial Section can take care of 23 children from six to fourteen years. Here the boys and girls have separate sleeping quarters. Ample bathing facilities are adjacent to all the dormitories. The playground is in the immediate rear for organized play. There is a small isolation ward ac-

\*Read before the Providence Medical Association, January 4, 1926.

commodating five children and a hospital on the grounds entirely separate from the other buildings.

#### Routine:

The children rise at 6 A. M. and wash and dress. At 7 they have breakfast. The younger children have a lunch and rest period at 10:30. The older ones attend the local schools in East Providence from 1 until 3 P. M. From then until supper is play time. Supper comes at 5:30. The older children go to bed at 7:30. They are also encouraged to assist in the light sweeping and washing of dishes.

During the vacation periods all children are taken out doors as much as possible and in the infant ward open piazzas have been constructed so that routine sun exposures may be given the growing children. Not less than 4 weeks and in many cases the whole vacation period is given the children either at the seaside or in the country. When possible it is planned to place the children with relatives during these vacations. We believe this return to the family group is good for both adult and child.

#### Diet:

Table No. 1 gives a typical weekly diet at the institution. Each child is allowed one quart of milk per day. Soups are made from meat stock with vegetables added. In summer cold cereal is served three times a week. Lettuce and tomato salad is also used extensively when in season. All children receive the same food but the quantity is varied according to the age of the child. Bread is allowed ad libitum, and surprising amounts are consumed each day. The bread is made at the institution and the average consumption per child per day is over half a loaf, or one pound. The feedings of all infants are prescribed by the physician on duty.

TABLE 1.

#### Menu for a Week.

##### SUNDAY

*Breakfast*—Cold cereal, bread and butter, fruit, milk.

*Winter*—Cocoa made with milk.

*Dinner*—Summer—Cold meat salad, potatoes, gravy. Winter—Pot roast with two vegetables, Jello, bread and butter, water.

*Supper*—Bread and butter, fruit cake, milk.

##### MONDAY

*Breakfast*—Hot cereal, fried potatoes, milk, bread and butter.

*Dinner*—Cold beef or lamb, boiled potatoes, carrots or turnips, bread and butter, rice pudding.

*Supper*—Bread and butter, prunes, cake, milk.

##### TUESDAY

*Breakfast*—Hot cereal, fruit, bread and butter, milk.

*Dinner*—Stew with vegetables and dumplings, bread pudding with rasins.

*Supper*—Stewed prunes, fried potatoes, bread and butter, milk.

##### WEDNESDAY

*Breakfast*—Hot cereal, toast and butter, milk, fresh fruit.

*Dinner*—Hamburg steak with beets, potatoes, bread and butter, rice pudding.

*Supper*—Baked apples, bread and butter, cake, milk.

##### THURSDAY

*Breakfast*—Hot cereal, bread and butter, milk, fruit.

*Dinner*—Corned beef and cabbage, bread, potatoes, custard pudding.

*Supper*—Prunes, cake, bread and butter, milk.

##### FRIDAY

*Breakfast*—Hot cereal, bread and butter, milk.

*Dinner*—Fish, potatoes, onions or eggs, tapioca or Junket, bread and butter.

*Supper*—Apple sauce, cake, bread and butter, milk.

##### SATURDAY

*Breakfast*—Hot cereal, bread and butter, milk, fruit.

*Dinner*—Baked beans, brown bread and butter, stewed fruit, cornstarch pudding, milk pudding.

*Supper*—Bread and butter, prunes, cake, milk.

#### General Health:

a. The general health of the children is supervised by the visiting physicians and each child is examined before admission to the institution. Every child is immunized against Diphtheria and vaccinated after six months of age. There has been comparatively little sickness of any kind in the institution during the past two years. During the past ten years there have been three deaths, one from Pneumonia following Measles, one from Cerebro-Spinal Meningitis, and one from Congenital Heart Disease. The especially good physical condition of the children reflects much credit upon the management of the home.

#### Family History:

Fifteen children gave a family history of tuberculosis in either one or both parents. Three children gave a family history of insanity while four gave a history of epilepsy and one of syphilis.

#### Examination of Children:

Fifty-six children were examined, the number of children present at the time of the first examination. The oldest was 15 years, the youngest was 7 months, the average age was 5 years and 9 months, 11 were under 2 years. Unless otherwise

stated, the figures quoted apply to the 45 children over 2 years of age.

Of these 45 over 2 years of age, 3 were more than 10% below weight, and 2 others, a total of 5, or 11%, were more than 7% below weight, according to the Baldwin & Wood age, height, weight tables; 13 were below the average. This compares very favorably with a report on 14 orphanages by Emerson in which he found 50 to 67% were under the average, and 30 to 50% were 7% or more underweight.<sup>3</sup>

Each of the children was examined according to a definite routine and the examination was made a part of his permanent record. The results are not given in detail because of lack of space. We found one child suffering from Chronic Heart Disease and one from Congenital Syphilis. Twenty-four children had definitely palpable glands in the cervical region. Nineteen had had their tonsils removed and we found 14 or more in which this should be done. Many children were found with decayed teeth, 26%, showing the need of dental treatment. Albumin was found in 4 specimens of urine, but this disappeared on further examination.

Five children were found to be backward in their school work and were examined by Drs. Ruggles and Butterfield. They were below normal in mentality and advised to be placed in special schools. Thirty children attending the public schools of East Providence were found to be normal in their school work and compared favorably with children coming from private homes.

#### Tuberculin Test:

Tuberculin Tests were done on the children and the results are of considerable interest. The intradermal method was employed in making the test because of its accuracy and ease. To make the test we used 0.1 cc. of 1:1000 dilution of Old Tuberculin. This was injected intracutaneously on the flexor surface of the left forearm. The first Tuberculin used was furnished by the New York City Board of Health. Doubtful cases were re-tested with a commercial preparation.

Table No. 2 shows that over 50% of all the children gave a positive Tuberculin test. This is probably accounted for by the fact that being an orphanage more children are present whose parents had died of tuberculosis than would be found in an average group of children elsewhere.

TABLE 2.

RELATION OF NUTRITION AND TUBERCULIN TEST			
	No. Tested	% +	% -
Orphanage children, all over 2 years	44	55.5	44.5
Orphanage children; 7% or more underweight .....	5	80.	20.
Orphanage children, below average in weight .....	13	77.	23.
Orphanage children, above average in weight .....	31	45.	55.
Lakeside Vacation Home children, mostly malnourished (not preventorium group) .....	328	58.	42.
Happyland children, not malnourished (Von Purquet Test used) .....	35	20.	80.
Bellevue Hospital Wards, 7 to 9 years old children .....	?	28.	72.

Table No. 2 also illustrates the fact that among all malnourished children there is a higher percentage of positive tuberculin tests than among children whose weight is up to the average. This suggests the explanation that a considerable proportion of children that give a positive tuberculin test have a sufficient infection in the hilus tissue to cause malnutrition. Another explanation would be that the malnourished children are the more susceptible to this infection. This association of malnutrition and a positive tuberculin test seems to be a significant one, and leads one to believe that these children should be treated as potential tuberculosis cases and receive tuberculosis treatment at least as long as the malnutrition exists.

In examining these children as well as others, we feel that clinical evidence, such as poor general condition, a positive tuberculin test, a bronchial whisper below the second dorsal spine, paravertebral dullness and an X-ray plate showing marked changes frequently suggest a probable diagnosis of clinical hilus tuberculosis and occasionally justify a positive diagnosis.

On eight of our children we made a diagnosis of probable hilus tuberculosis. In other words, we believed that they had an active tuberculous infection in the lymphatic system of the hilus region which was responsible for their poor condition. The evidence on which this diagnosis is based is shown in Table 3. This tabulation is unsatisfactory, as four of the factors, the child's condition, the paravertebral dullness, bronchial whisper, and the interpretation of the X-rays are partly dependent on the individual opinion of the examiner. In this study the percentage of underweight is



used, not as the best index of the child's condition, but because it is convenient for statistical purposes. The paravertebral dullness was recorded by one of us at one examination before the histories or X-rays were obtained and without consideration of the other factors. The X-rays were interpreted by Dr. Gerber.

TABLE 3.  
HILUS CASES

Name	Age	F.H.	Nutri- tion	T.B. Test	X-Ray	P.D.
Mary B. ....	14.6	?	-2%	+++	+	++
James D. ....	7.6	+	-5%	+++	+	++
Ralph D. ....	6.1	+	-1%	++	-	++
Mary H. ....	8.7	+	-13%	+++	±	+
John K. ....	7.3	+	0	+++	±	++
Emma M. ....	7.	0	-4%	++	+	++
Freda M. ....	5.9	+	+14%	+++	+	++
John R. ....	8.8	+	-4%	++	+	++

#### SUMMARY

1. The fact that a high percentage of these children have been exposed to tuberculosis brings this problem into prominence and necessitates continued study and treatment.

2. The state of nutrition of the children is good, being considerably better than that found in most similar institutions, and fully up to the average of children in private homes. The board and staff of the Orphanage are, therefore, to be congratulated on the success of their management.

Thanks are due to Dr. Gerber for interpreting our X-ray films, to Dr. Pickney for taking the X-rays, for furnishing the statistics from Lakeside and Happyland, and for providing us with history and physical examination blanks, and to the staff and friends of St. Mary's Orphanage for their hearty cooperation.

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#### ARTERIO-SCLEROSIS.\*

BY DR. C. S. WESTCOTT,  
PROVIDENCE, R. I.

The title of this paper, Arterio-sclerosis, connotes such a broad field that I hasten to assure you that I shall attempt to give only a brief resume of our present knowledge of the subject passing lightly over the pathological studies which have been carried on with great patience and skill, both in this country and abroad, and giving more particularly the conclusions as they affect, not the research worker, but the practitioner on the firing line.

As practitioners we are primarily interested in diagnosis, prognosis and treatment. As Yandell Henderson says:

"To understand, to predict, to control; these are the objects of all scientific investigations. The last and greatest is control but unless we have first attained an understanding of the nature and working of basic phenomena, prediction is inaccurate or impossible and control is incomplete and unreliable. Such, I take it, is always the relation of applied science to pure science."

Of the various definitions of arterio-sclerosis that given by Osler is the shortest: "A condition of thickening of the arterial coats, with degeneration, diffuse or circumscribed." This definition states the two essentials of arterio-sclerosis, formation of new tissues and degeneration. Thickening without degeneration, as in thrombo-angitis obliterans, is excluded. Also for the purposes of this paper we would exclude certain forms of arterial disease whose causes are known, as syphilitic and tuberculous endarteritis.

Arterio-sclerosis is primarily an anatomical rather than a clinical entity. It is then more convenient to classify the forms of arterio-sclerosis morphologically rather than clinically, because clinically the various forms tend to overlap and the symptoms vary, not according to the type of pathological condition present, but according to the particular organ or organs involved.

The forms most commonly recognized are Nodular, Senile, Diffuse hyperplastic and Monckeberg's Sclerosis.

The Nodular form is found chiefly in the aorta and larger arteries and is characterized by the

\*Read before the Providence Medical Association, March, 1926.

presence of irregular plaques which begin as gelatinous masses and later harden and become calcified or go through fatty degeneration. In the latter event the softened tissue breaks down and is carried off by the blood stream, leaving the so-called atheromatous ulcers. Microscopically the primary change is a proliferation of the cells of the intima, chiefly the subendothelial layer, followed by degeneration. The media under these spots is usually thinned and may show fat necrosis.

In the Senile form the characteristic lesions are found most commonly in the medium sized arteries such as the temporal and radial. The process is essentially the same sequence of proliferation and necrosis, the most noticeable difference being that the whole circumference of the vessels is affected, rendering them rigid—the well known pipe-stem arteries.

In the diffuse hyperplastic form, sometimes spoken of as arterio-capillary fibrosis, the thickening occurs chiefly in the small arteries and arterioles. This is followed by degeneration. The lumina are occluded and many of the capillaries disappear. There may be a thickening of the media and occasionally even the adventitia may be affected. In this diffuse hyperplastic form the larger vessels are relatively free from change, but may be affected coincidentally by the nodular form.

The point is made by Geoffrey Evans that the cell proliferation comes before any degenerative changes and is evidence of inflammation, a response to irritation and not the secondary effect of necrosis of cells in the immediate neighborhood. He visualizes arterio-sclerotic disease as an active process capable of progress or arrest, not simply as the end result of arterial decay.

In considering the etiology we come immediately to the much discussed question of the relationship of hypertension to arterio-sclerosis. Which is cause and which is effect? There is a group of cases with blood pressure persistently over one hundred and eighty and yet without demonstrable disease of the arteries or kidneys. This is the so-called hyperpiesia. If this hypertension does not disappear it undoubtedly leads to arterio-sclerosis. In the second group the increased pressure appears apparently at the same time as the evidences of arterio-sclerosis and these are followed later by disease of the heart and kid-

neys. In the third group the hypertension is very evidently secondary to a pre-existing nephritis and cardio-vascular disease.

We are ignorant of the precise causation of these vascular changes, but we do know some of the conditions which seem to favor the onset of arterio-sclerosis. As a concomitant of old age arterio-sclerosis is the natural result of the wear and tear of life. With a normal heredity and no undue stress the senile form does not usually make itself manifest before the sixth decade of life. An earlier onset is determined either by an hereditary tendency to early arterial decay or by subjection of the individual to more than the usual amount of physical or mental wear and tear.

Certain intoxications such as alcohol, lead and gout have long borne the blame for the early onset of arterio-sclerosis, although the mechanism has never been clearly proven. The toxins of a disturbed metabolism or of acute infections are known to be followed by changes in the arterial walls. These changes are frequently found after typhoid fever.

The question of diagnosis is a double one. First we wish to know whether the condition is present and next we wish to determine the degree of activity. An old arterio-sclerotic condition due to a long past infection and not progressive is vastly different from an active, rapidly progressing arterial disease.

The signs and symptoms of arterio-sclerosis are largely dependent upon the dysfunction of some organ or organs, due to their impaired blood supply. The signs and symptoms of active arterio-sclerotic disease on the other hand are primarily hemorrhage and pain. These are best exemplified in those cases in which the process is too severe and rapid to permit of any repair. The two dramatic terminations due to arterio-sclerotic disease are cerebral hemorrhage and angina pectoris.

Here we have the sign hemorrhage and the symptom pain. Hemorrhage points to diseased vessel walls. Hypertension alone, whether sudden or prolonged, will not cause hemorrhage from a healthy vessel. We have all seen people live for years with systolic pressures of three hundred. On the other hand hemorrhage may occur from a diseased vessel with a normal pressure. From this it follows that hemorrhage anywhere in the body may be the signal that there is active arterio-

sclerotic disease. We are familiar with the recurrent epistaxis of the arterio-sclerotic, but we do not always give proper weight to the occurrence of hemorrhage elsewhere. The same process may occur in the lungs, kidney, intestine or uterus.

Microscopic hemorrhages of great significance may be detected if we are on the watch for them through examination of the urine and the fundus oculi. These signs may well antedate any other signs or symptoms. In patients of middle life who have gross hemorrhages it is well to look beyond the apparent local cause for a possible arterio-sclerotic disease.

The typical pain of arterio-sclerotic disease is the pain of angina pectoris. In the full blown attack this pain is so severe and so obviously points to a not distant fatal termination that it usually receives the respect due it. Unfortunately, however, it is not always recognized at its first appearance for what it is. Many an acute indigestion proves in the light of later developments to have been an early manifestation of angina. Any pain in chest or abdomen coming on after exertion or at night after the ingestion of a full meal in a person of middle age, merits careful investigation. The early anginal pain may be little more than a feeling of discomfort, and left to himself the patient may attempt to "walk it off," than which few procedures are more unwise.

Within the month the writer was called at midnight to see a man in the middle sixties who thought he was suffering from an acute indigestion. He said that the previous night he had had a similar attack, somewhat less severe. It had subsided and during the day he had gone about his business only to have it recur that night. Six hours later he was dead.

There are other pains which may point indirectly to arterio-sclerosis. Pains in the occipital region, neck, hips and legs, are frequently dependent upon this condition. Superficial arteries are sometimes tender and the pain of arterial embolism is sudden and severe.

In arterio-sclerosis as in so many other conditions with which we are called upon to deal the symptomatology is almost infinitely varied. If all our cases followed the textbook pictures Medicine would cease to be an art and fall to the level of a science. The typical points, however, for which we look are as follows: thickened super-

ficial arteries, and care must be taken that they be palpated when they are empty of blood, hypertension, hypertrophied left ventricle with accentuated aortic second sound, possibly increased urinary output with transient albuminuria and occasional hyaline casts.

A patient with this symptom complex may continue in apparent good health for years, or the condition may progress rapidly. The particular symptoms for the relief of which he seeks a physician depend upon which organ or organs have been most impaired in their blood supply.

If the principal damage is to the blood supply of the heart a thrombosis may cut short the patient's history without warning, or he may show the signs of myocardial degeneration. Hypertrophy may give way to dilation, the valves may become incompetent and the symptoms of a general cardiac failure may dominate the picture.

The blood pressure is usually high but in the later stages may be extremely low because of the failing power of the heart.

The cerebral symptoms are many and include those which are characteristic of the various degenerative conditions which follow hemorrhage from or occlusion of the smaller arterial branches. There may be fugitive attacks of aphasia, hemiplegia or monoplegia. These attacks clear up in a few days and most authorities agree that they are best explained on the hypothesis of transient vascular spasms. This is impossible to prove and so the field is left open to those investigators who believe that every such attack is the manifestation of minute cerebral hemorrhage. Failure of the mental powers, either transient or progressive, is seen, but some patients with advanced sclerosis of the cerebral arteries may keep their faculties at normal keenness until struck down by some sudden vascular accident.

Gangrene of the extremities may result from the slow occlusion of the arteries or from their sudden plugging by an embolus.

Cramps in the leg muscles and inability to walk either fast or far because of the pain is a result of sclerosis of the arteries of the lower extremities.

TREATMENT includes both the general management of the patient and the administration of drugs. If obliged to choose one method to the exclusion of the other, the decision would unques-

tionably be for rational living rather than for dosing. To be of greatest benefit to the patient the rational living should begin long years before the diagnosis is made. In other words we should all consider not only our patients but ourselves as potential victims of arterio-sclerosis. The old Greek ideal of "nothing to excess" is most applicable in so regulating our lives that our arteries may function long and well.

The laborer in the steel mill and the high salver load his stomach. The question of allowing meat should be decided with reference to the presence or absence of nitrogen retention. Meat stock soups, however, are high in extractives and low in nutriment and had best be omitted. In the absence of oedema enough liquids may be allowed to satisfy the thirst. A salt poor diet is desirable.

Regulation of the bowels is of great importance both to insure a sufficient excretion of toxic matter and to prevent straining at stool which if hypertension is present may be the immediate cause of the rupture of a diseased cerebral artery.

EXERCISE should be moderate and carefully graduated to the condition of the circulation and should never be carried to the point of dyspnoea or marked fatigue.

In BATHING the same moderation should be observed. Baths should be neither very hot nor very cold. As well send a man running up hill as to put him under a cold shower. As cardiac gymnastics there is not much to choose between the two procedures.

OCCUPATION. The high pressure business man must be told to let up, but it is undoubtedly a serious mistake in a case of moderate severity suddenly to take away all business contacts. This in the patient's view is to remove all incentive to live. Just here it is of value to be able to differentiate the actively advancing case from the static arterio-sclerotic condition.

A sufficiency of rest and sleep is essential and it is well to insist upon regular rest periods during the day. If nocturnal sleeplessness is present try first the simple measures such as a tepid bath followed by a glass of warm milk. If these fail, resort must be had to hypnotics, for sleep must be had. The best are probably the bromids and the synthetics, including the barbital group.

When we come to consider the MEDICINAL treatment we find as in so many other conditions that there is no specific treatment for arterio-sclerosis. We must treat not the disease but the patient. For many years the iodids have been used with very little demonstrable result, if we except the almost inevitable disturbance of gastric digestion. This may indeed be a blessing in disguise by fond of the joys of the table.

For hypertension the nitrite group is of value, interfering with the appetite of the patient over Amyl nitrite gives us spectacular results in some cases of angina pectoris, but its effects as a vasodilator are short lived. To a less degree the same may be said of nitroglycerin. In erythrol-tetranitrate we have a drug capable of similar effects but whose action is slower and of greater duration. Personally the writer feels that more comfort is derived from the taking of the bromids than from any other single drug. This, of course, refers to the more or less chronic conditions and not to the vascular emergencies.

The SYMPTOMATIC treatment resolves itself into the attempt to correct so far as possible the dysfunction of the various organs with whose blood supply there has been interference.

In CONCLUSION, then, we must be always on the alert to recognize at the earliest possible moment the signs of a beginning arterio-sclerosis that we may early advise our patient in regard to the needful regulation of his activities. In order that we may do this intelligently we must differentiate between a more or less stationary condition of arterio-sclerosis and an actively progressive arterio-sclerotic disease. In the former case little is needed in the way of restriction beyond the general advice to live moderately, provided, of course, the kidneys and myocardium are in good condition. In the latter case, however, the activities of the patient must be cut to the minimum, even to the extent of absolute rest in bed for the severest cases. It is the border line cases which will test our diagnostic acumen. To the patient our decision is all important.

We must neither take away needlessly the pleasures of normal activity nor must we through carelessness or a mistaken compliance with the patient's wishes allow him to go to an untimely death.



VOMITING AND ABDOMINAL PAIN IN  
NEUROLOGICAL CONDITIONS\*

BY HARVEY B. SANBORN, M.D.

PROVIDENCE, R. I.

I wish to speak first briefly of pain and vomiting in general and then to speak at greater length of some of the neurological diseases which most frequently simulate an acute abdominal condition and so sometimes offer important diagnostic problems.

We may think of pains according to the source from which they arise and classify them as follows: (1) First and most common are the pains which are caused by a disease process which is outside of the nervous system but which stimulates nerve endings in the diseased or injured part in a way or to a degree to be perceived as pain. We are taught in physiology that pain may be caused either by stimulation of special sensory endings adapted to the perception of pain or by excessive stimulation of temperature or tactile sensory endings. So far as I am aware special sensory end organs for pain have not been demonstrated within the abdominal cavity, and it seems to me probable that pain arising therein is caused by excessive stimulation of undifferentiated sensory endings. It is interesting to note that the healthy contents of the abdominal cavity is comparatively insensible to pain from certain stimuli which would be painful on the skin surface, such as pin prick or a cut with a sharp instrument. This is explained by regarding pain as a biological development with a purpose, that purpose being the protection of the individual. Since, under natural conditions, the abdominal viscera have not been exposed to stimuli of this sort, a painful response to them has never developed. On the other hand, such stimuli as squeezing, tension, crushing, pulling, etc., are painful. For example: spasm of the muscular wall of gland ducts or hollow viscera is painful. Localization of intra-abdominal pains is poor and the painful viscus causes pain to be referred to that part of the body surface supplied by the spinal nerve from which arises the sympathetic nerve branch supplying the viscus.

(2) A second general source of pain is a diseased or toxic condition of some part of the sensory tracks of the central nervous system, not-

ably nerves or the sensory ganglia. Examples of pains of this sort are the pains of a neuritis or those caused by a chronic inflammatory or degenerating process going on in the sensory spinal ganglia such as occurs in tabes.

(3) A third source of pain is primarily or essentially within the psyche. In other words, the pain is due to a functional state of the cerebral cortex, and intimately associated with it a disordered state of the vegetative nervous system. Hysterical pain is the chief illustration of this sort.

In brief then, we may have pain (1) due to a pathological condition outside of the nervous system; (2) due to disease of the nerve structure itself; and (3) due to a psychic state.

A classification exactly similar to the above may be made of cases of vomiting. (1) In the first group we have those cases of vomiting due to some disorder of the stomach itself or of some other viscus; the nervous system simply supplying the reflex arc by which a sensory stimulus results in the motor act of vomiting. An overloaded stomach or an inflamed appendix are examples. (2) Secondly we have cases of vomiting due to a toxic state of the nervous system as in the initial stage of various infectious diseases or due to concussion of the brain or increased intracranial pressure causing irritation of the vomiting centre in the medulla, (3) and thirdly we have those cases of vomiting due to a psychic state; it may be simply a disgusting sight that arouses it, or it may be a hysterical state.

I wish now to cite brief case histories illustrating the three neurological conditions which every once in a while present acute abdominal pain and vomiting as outstanding symptoms, and for that reason have to be kept in mind by surgeon and internist as possible causes of these symptoms.

CASE 1. L. S. 48 yrs. Female. Married. Admitted to the hospital after suffering for two days from vomiting and epigastric pain. On being questioned, she stated that with the pain there was the sensation as of a rope tight about the upper abdomen, the ends crossed, and the rope twisted slightly. She gave the history of having had several similar attacks during the preceding six years, but none quite so severe as this one. She had not suffered from lightning pains in her limbs, and there was nothing in her past history to suggest syphilis. The average duration of the attacks had

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been about a week, and at these times she would be confined to her bed. Her examination showed normal temperature and pulse; abdomen somewhat sore throughout epigastrium, but no localized tenderness nor rigidity and no distention. Her pupils were regular but unequal, and reacted neither to light nor accommodation. Her blood Wasserman 4 plus with cholesterin, 0 with acetone. Spinal fluid examination as follows:

Cell count 50 (all lymphocytes); Albumin trace; Globulin negative; Sugar normal; Colloidal Gold Curve 0111000-000; Wasserman negative.

The diagnosis of *Tabes with Gastric Crisis* was made, based on the partially positive laboratory findings, the unequal, non-reacting pupils, and the fairly typical history of attacks of gastric crises. The pain and vomiting in such a case is presumably due to the syphilitic process involving the sensory spinal ganglia of the spinal segment supplying the epigastrium, or possibly to the accumulation of toxins.

(2) The second case was seen by me in consultation with a surgeon who had at first considered an acute surgical gall bladder. The patient, a married woman thirty-eight years of age, had had a mild grip attack two weeks previously and had apparently recovered. Three days before I saw her she again became ill, soon showing some fever, pain in the upper right quadrant of the abdomen, vomited a few times, and was rather dull and sleepy.

Examination showed a moderate fever, a rather dull mental state, no definite abdominal tenderness nor rigidity, but on inspection a frequent and regular twitching of some of the muscle bundles in the right upper quadrant. There was a slight ptosis of the right upper eyelid and slight weakness of the internal rectus muscle of the same eye. The reflexes were normal and there were no abnormal reflexes. There was slight stiffness of the neck. The blood gave a negative Wasserman test. The spinal fluid gave a cell count of 27 about evenly divided between polynuclears and lymphocytes, slightly increased globulin, negative colloidal gold, positive mastic and negative Wasserman. The clinical picture had changed from one suggesting an acute surgical condition to one definitely neurological. On the febrile reaction with eye muscle paresis, the rhythmic muscular twitching, and the spinal fluid findings, a diagnosis was made of epidemic encephalitis, which was confirmed by the further course of the disease. In

these cases of encephalitis the pain, when present, is presumably due to an acute inflammatory condition involving the spinal sensory ganglia.

(3) My third case is that of a married woman, age 32, who was admitted to the hospital with a moderate fever and evidence of tonsillitis. She gave a history of previous attacks of tonsillitis and one attack of acute rheumatic arthritis. Also, from the age of thirteen, she had been subject to so-called fainting spells in which she would seemingly become unconscious, and in some of them go through some purposeless motor activities and perhaps scream. After her admission to the hospital, the evidence of tonsillitis soon disappeared. She had one or more of her spells nearly every day. She began to complain of pain in the right lower abdominal quadrant and to vomit every time she ate or drank anything. The pain was constant and the vomiting persistent, but her temperature was by this time normal and she did not appear especially sick. Examination showed some general superficial abdominal tenderness, but no rigidity and no masses. It was found that she could be brought out of her spells by pressure on the supra-orbital nerve. On going into the history of these spells more carefully, it was learned that as a child she was punished for something by her father. She took the punishment in a bad spirit and refused to speak to her father afterwards. He became sick and died without the girl having a chance to make up with him. Shortly after her father's death she had her first spell. As these spells were manifestly hysterical and as there were no certain signs of abdominal pathology, it seemed probable that the vomiting and abdominal pain were hysterical. A little psychotherapy in the form of suggestion was given; less attention was paid to her abdominal condition, and very soon she was recovering. In these cases of hysteria we think of the symptoms as being psychic in origin, but they are more understandable if we think of the vegetative nervous system as being in a state of disordered function as well as the mind. Deranged vaso-motor functions result in localized congestions and various motor and sensory pathways become hyper-irritable, so that pains, tenderness and various reflex acts such as vomiting, hiccoughing, etc., may manifest themselves.

I have thought it of some interest to cite three actual cases which, to my mind, represent the three neurological conditions which are most apt at some stage to give a picture at least suggesting abdominal disease due to the presence of acute abdominal pain and vomiting. These are (1) *tabes with gastric crisis*, (2) *epidemic encephalitis*, and (3) *hysteria*.

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## EDITORIALS

### THE MENACE OF CHOREA

The dead hand of medical tradition is nowhere more heavy than in the matter of chorea. Misled by our eyes we still regard this dangerous disorder as a nervous disease, and indeed as a functional nerve disease—the worst error of all, for by so doing we fail to comprehend the gravity of the situation which confronts us. It were far better

for our little patients if the writers of text-books, instead of waiting on the deliberations and hesitations of pathologists and bacteriologists, should follow the evidence of clinical experience and place chorea under the diseases of the heart. This would, at any rate, call the attention of physicians to the most important problem and the most insidious danger which confronts them in the management of a choreic patient. Moreover, it would direct our attention to the main issue rather than leave us in the fool's paradise of thinking that the adequate treatment of chorea is being followed

when we prescribe a preparation of arsenic together with some more or less harmless sedative. If, as we should, we look upon chorea as being actually, or potentially, a disease of the heart, we shall not deceive our patients and ourselves with the false belief that chorea is of no particular importance.

A good many years ago Norman Moore, lecturing on acute rheumatic fever, before the Royal College of Physicians, remarked that it was his considered opinion that any patient presenting acute articular symptoms who did not at the same time give evidence of cardiac involvement, was the victim not of rheumatic fever, but of some other type of arthritis. Now while it would be perhaps wide of the truth to say that any patient presenting irregular muscular movements without cardiac involvement is no subject of chorea, nevertheless anyone with much experience of chorea would hesitate to demur to such a statement as a practical guide to treatment. When one has, time and again, watched the development of endocarditis and even of carditis in patients whose motor symptoms were only moderately severe, he is likely to become more than impatient with the conception of chorea as a nervous disorder which the little patient will "outgrow."

Well then, how shall we regard chorea? Certainly as an infectious disease and always as a serious condition requiring two things, first, the immediate removal of every focus of possible infection; and secondly, the prescription of rest in bed for the patient. This, some conservative may remark, is pretty radical; and so indeed it is, were the evidence for its need less convincing. How many choreic patients, do you suppose, are walking about, playing such games as base-ball and even going into the water to bathe, whose teeth, tonsils and adenoids are infected, and whose hearts are the seats of serious and perhaps, in the long run, fatal disease? And, by the way, who has ever presented any evidence which scientific thinkers will accept to show that the medicinal treatment of chorea has been effective? Is it not rather that while we are giving our medicines, the natural immunity to infection is being established by the body, and when this has accomplished its work, the patient gradually returns to health. If one excludes from the rubric of chorea the tics and other movements, it will be found that in the vast majority of these patients focal infections in

the mouth and throat are present and should be removed at once. After that we may give any drug or vaccine which our fancy suggests.

And why rest in bed? Because yet again our stethoscopes have misled us. It is false to think that we must have some abnormal sound in a heart as the signal of its sickness. To believe this were indeed to flatter our ears and to invest our instruments with a precision of which they are not capable. Who is skillful enough to discover the earliest departure from health in a choreic heart? And if we are unable to do this, is it not the part of wisdom to act as if every heart were the seat of pathological changes, even when our relatively gross methods of examination cannot demonstrate them? No one would think of allowing a patient with rheumatic fever to remain in school or at work or play, and yet the incidence of heart involvement is just as frequent in chorea as in rheumatic fever. Of course the patient will object to being and staying in bed, and no doubt many of the parents will, and do, protest more than the children. But concerning what do our patients and their relatives and friends not protest? Has the whole history of medicine been anything other than the improvement of the public health in spite of the recipients' none too gracious protestations? As physicians our duty is to order what we know our patients require, not what they, for the moment, think they want. And so it all comes to this—that chorea is an affection of the heart with coincident involvement of the central nervous system; and since the evidence as to causation is practically certain, the treatment of chorea is the removal of all discoverable foci of infection, together with the prescription of absolute rest for the patient until the imminent dangers of cardiac damage have disappeared.

#### THE DISCOVERER OF ANAESTHESIA

A statue of Crawford W. Long, "the discoverer of anaesthesia," has been placed in Statuary Hall in the National Capitol, and dedicated with elaborate ceremonies. Also, in Hartford, Connecticut, is the statue of Herbert Wells, "the discoverer of anaesthesia." Also, in the Hall of Fame in New York City, is the bust of William T. G. Morton, "the discoverer of anaesthesia."

At the town of Athens, Georgia, in March, 1842, Dr. Long administered ether to a patient and performed painlessly a minor operation. This



is attested by a sufficient number of sworn statements. In the course of the following seven years, Dr. Long made use of ether in as many as eight similar operations, and in December, 1849, he reported his discovery in the *Southern Medical and Surgical Journal*. The remarkable thing about his discovery was that it made so little impression on Dr. Long, on the local medical profession and on the people of Georgia. Here in the town of Athens had been discovered what Dr. Welch calls "the greatest gift of American medicine to mankind and one of the most beneficial ever conferred." Yet there was no sound of trumpets, no parade, no shrine dedicated, no pilgrimage organized, no evangelist preaching a crusade against human suffering. Instead there was complete, absolute silence for seven years. Unknown, the greatest gift of American medicine to humanity lay buried in Athens and might have remained there forever.

In the meantime, Herbert Wells, a dentist of Hartford, was using nitrous oxid to procure insensibility for painless tooth extraction, and in 1845 attempted to demonstrate his work before the Harvard Medical School. Unfortunately the demonstration was unsuccessful. It seemed that the possibility of painless surgery was too chimerical to ever be realized. On October 16, 1846, William T. G. Morton gave a successful demonstration of etherization at the Massachusetts General Hospital. Immediately the news of the great discovery spread and soon had reached all parts of the civilized world.

Oliver Wendell Holmes originated the term anaesthesia and first used it in a letter to Dr. Morton dated November 21, 1846. He said, "Everyone wants to have a hand in a great discovery. All I will do is to give a hint or two as to names, or the name to be applied to the state produced and the agent. The state I think should be called 'Anaesthesia.' The adjective will be 'anaesthetic.' Thus we might say the state of anaesthesia, or the anaesthetic state."

It certainly was at Boston, in the year 1846, that anaesthesia was discovered to the world. The old operating room at the Massachusetts General Hospital will always be celebrated for the great occurrence of October 16, 1846. The Massachusetts General Hospital is the shrine which is annually visited by pilgrims on the anniversary of

the first successful demonstration of anaesthesia. The entire credit for the discovery can not be given to one alone. It was a natural development of modern civilization. Former ages had been busied more with inflicting pain than with relieving it. By the beginning of the nineteenth century, humanitarian ideals had made considerable progress and human torture was no longer popular. The conception of relief from the pain of surgical operations came to many, but to William T. G. Morton alone is due the credit for the first successful demonstration of anaesthesia. Without his demonstration years might have elapsed before the conception of many minds had ripened into a practical reality.

#### IMPROVING A THERAPEUTIC AGENCY

Without question the most valuable single therapeutic agency available to the physician or surgeon is a competent, highly trained nurse. Anything which tends to raise the quality of the nursing in a community is of vital importance to the people and is especially appreciated by the medical profession.

In this connection it is of interest to note that the alumnae of the Rhode Island Hospital Training School have had the wisdom and loyalty to endow a scholarship for advanced study. The sum of six thousand dollars was raised, making available annually three hundred dollars to aid the recipient in pursuing a course at either Columbia or Yale. Both universities offer courses for those intending to teach the nursing branches.

Scholarships of this sort help to solve the nursing problem in two ways. They tend to attract the most desirable type of young women and aid in training competent teachers. Without good teachers it is useless to expect satisfactory graduates.

It is to be hoped that other training schools in our state will follow this praiseworthy example.

#### HOSPITALS

##### THE MEMORIAL HOSPITAL

Meeting held June 10, 1926.

Meeting called to order at 9:15 P. M. by President Pro Tem. Minutes of last meeting were read and approved.

Members present: Drs. Sweet, Stone, Bates, Kelly, Dowling, Kenney, Shaw, Saklad, Kerney,

Fenwick, Lutz, Holt, Hawkins, Davis, Feinberg, Mills.

Secretary read report from Superintendent regarding visit of Dr. Eaton, representative from the American College of Surgeons. Motion moved and seconded that letter be placed on file.

Report from Surgical Service read by Interne. Dr. Kerney reported on Urological Service. No reports from Medical, Children's, Eye and Orthopedic Services.

Motion passed that no meetings be held during July and August. Mr. William MacGregor from the Board of Trustees was present.

A very interesting paper on "Hints Concerning Eyes" was read by Dr. Joseph Hawkins. Meeting adjourned at 10:30 P. M.

JOHN F. KENNEY, M.D.,  
Secretary.

### MISCELLANEOUS

#### REPORT OF THE DELEGATE TO THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT DALLAS, TEXAS, APRIL 19-23, 1926.

BY ROLAND HAMMOND, M. D.,  
PROVIDENCE, R. I.

It is my privilege as well as my duty to present a brief report of the activities of the House of Delegates of the American Medical Association at the annual meeting in Dallas, Texas, April 19-23, 1926.

The Association had never before met in the southwest, and extensive preparations had been made to provide adequate accommodations for meeting and exhibition purposes, as well as for housing and entertainment of guests. On the whole, the arrangements were satisfactory, although hotel rooms were not always available. In the future, no city will be chosen as a meeting place which has not been investigated and approved by the Board of Trustees.

I wish I could impress upon each one of you the great work which the American Medical Association is doing through its officers and House of Delegates to further the interests of organized medicine by its scientific assembly, its Board of Trustees and the various councils or standing committees. These executives are intensely eager in their devotion to the interests of the medical

profession, to the cause of scientific medicine and to the education of the general public in health matters. It is a powerful organization fighting the battles of the profession in a disinterested way and its activities should have the whole-hearted support of every county and state medical society in the country.

The House of Delegates, as you know, has a similar organization to that of our National House of Representatives, with delegates accredited on the basis of the medical population of the various states. Of the 170 delegates in the House, 141 were present and voting—a remarkable record considering that the place of meeting was so far removed from the larger centres of population. At least two full days of the session are devoted to this work, and more time is required of those serving on reference committees.

The meetings of the House at this session were marked by careful, painstaking work with little that was spectacular. The recommendations of the Board of Trustees, and the various councils received careful study.

The Association is prosperous and has the largest membership in its history, making it the greatest medical organization in the world. The Spanish edition of the *Journal* is becoming more popular and the Directory more profitable. *Hygeia* is growing in circulation and shows a smaller deficit each year. This health magazine should be in the home of every intelligent layman in this country. The reduction in quackery is largely due to the valuable work of the Council of Pharmacy. It was recommended that State societies co-operate with the House of Delegates in a campaign to control irregular practitioners and it was urged that the term "Doctor" be confined to physicians and dentists.

Periodic health examinations were approved and strongly advocated by President Haggard and President-elect Phillips in their addresses.

One of the most vital of the questions discussed was that of expert opinion evidence, because of the public criticism leveled at both legal and medical professions in recent criminal trials. Committees of the American Bar Association and the American Medical Association have co-operated in suggesting remedial legislation, and they endorse the principle that experts in civil and criminal cases should be appointed by the court, paid out of the public funds, and may furnish a written report.

In medical education it was urged that efforts be made to reduce the age of graduation for medical students. The need for the basic trained nurse was recognized and a revision of the curriculum in hospital training schools was recommended.

Committees reported on such varied subjects as zinc stearate dusting powders, trachoma among the Indians, contract practice, narcotics and prohibition. The last subject, which in previous years has come in for much stormy discussion, was lightly touched upon at this session. A committee was appointed to make a survey of the need for a home for incapacitated practitioners. An interesting address was given by Col. Gilbert E. Seaman on the work of the Veterans' Bureau. The House heartily disapproved of the provisions of the World War Veterans Act of 1924.

The Board of Trustees declined to participate in the Gorgas Memorial, because they felt it to be a dangerous expedient to lend its influence to the creation of an enormously financed foundation under federal charter, without adequate control by the Association, which has less than 10% representation on the board, and in view of the fact that the accomplishments of the foundation depend almost entirely on the active co-operation of the medical profession.

On the final day of the session of the House, Dr. Jabez North Jackson of Kansas City was elected President-elect, and Washington, D. C., was selected as the place of meeting for 1927.

The meeting places for the Sections and the Scientific and Commercial Exhibits were held in a large building in Fair Park, about two miles from the center of the city. Taxis ran frequently and charged fifty cents a trip. In Fair Park were held the Texas barbecue and the Mexican dinner, over 10,000 people being fed on each day.

An international touch was given to the meeting by the presence of a company of distinguished Mexican physicians. A large luncheon in their honor at the University Club called forth many expressions of good feeling and friendship from both American and Mexican orators. Following the meeting many physicians availed themselves of a trip to old Mexico, which was conducted under unusually favorable conditions.

Southern hospitality, generous and spontaneous, was everywhere in evidence and Dallas proved an attractive city for a few days sojourn.

## UNWARRANTED THERAPEUTIC HOPES

Although drastic restriction in diet no longer characterizes the management of diabetes the problem of suitable foods for diabetic patients still looms large. Insulin is not a "cure"; consequently the most rational policy at present consists, in the words of Joslin, in utilizing this agent along with all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet that will keep the urine sugar-free; avoidance of overnutrition or extreme undernutrition, and a method of life compatible with the strength that such a diet affords. Side by side with the exclusion of foods that promote either glycosuria or ketosis or both has occurred the search for palatable energy-yielding substances that will enrich the dietary of the diabetic patient without giving rise to the untoward consequences mentioned. The proposal for the use of intarvin (glyceryl margarate) by Kahn of New York, whose untimely death has just occurred, represented an attempt to furnish a fat not likely to promote ketosis in its metabolism.

There have been varied efforts to discover derivatives of the sugars of a chemical character such that they will not escape oxidative destruction as ordinary carbohydrates do in the diabetic organism. Caramel-like substances have been recommended, particularly by German clinicians. There are pitfalls, however, which every one interested in such entirely justifiable attempts must learn to avoid. The polysaccharide carbohydrate inulin, which by hydrolysis readily yields the sugar fructose just as starch yields glucose, has been recommended in the past for patients with diabetes. There are experimental evidences that considerable quantities of inulin, or inulin-bearing vegetables such as the Jerusalem artichoke, may be consumed by such patients without augmentation of glycosuria. This does not guarantee an actual utilization or "assimilation" of the inulin, however. There are no enzymes in the alimentary tract of man that are known to digest inulin, although it can be hydrolyzed by the acid gastric juice. It is conceivable, therefore, that the apparent tolerance of diabetic patients for inulin may be due to actual failure of digestion and absorption of this carbohydrate.

The real index of utilization in such instances is derived from observations of the metabolism—

evidences of an actual combustion of the product in question. This is emphasized anew by the recent American studies of commercial glucosane preparations.<sup>1</sup> The anhydrosugar glucosane ( $C_6H_{10}O_5$ ) and its polymer, tetraglucosane, are used in Germany in the dietary treatment of diabetes. These substances are reputed to be oxidized by the diabetic patient since, according to Nothmann and Kühnau<sup>2</sup> and others, no extra urinary sugar results after its administration, no rise in blood sugar occurs thereafter, and an antiketogenic and protein sparing action follows its ingestion. It is likewise reported to be glycogenic. The new American experiments demonstrate that large quantities of ingested tetraglucosane are excreted unchanged in the feces. Part may be destroyed by intestinal bacteria. As Deuel, Mandel and Waddell significantly point out, if a substance like glucosane is oxidized in diabetic patients it can be proved only by the demonstration of an increased respiratory quotient following its ingestion, coupled with the proof of its absorption from the alimentary tract and its nonelimination by the kidneys. Only rigorous experimental work of this sort will protect the enthusiast against the disappointment of ill founded therapeutic hopes.—*Jour. A. M. A.*, May 22, 1926.

<sup>1</sup>Deuel, H. J., Jr.; Mandel, J. A., and Waddell, S. S.: *The Physiological Behavior of Glucosane*, Proc. Soc. Exper. Biol. and Med. 23:431 (March) 1926.

<sup>2</sup>Nothmann, M., and Kühnau, J.: *Die Therapie der Gegenwart* 9:1925.

#### OIL OF WINTERGREEN—A WARNING

Among the substances listed in Useful Drugs<sup>1</sup> is methyl salicylate, more familiarly known as oil of wintergreen, and most commonly used in salves or liniments for external application. When thus absorbed or when taken internally, as is sometimes recommended, the drug produces the effects of salicylic acid or the salicylates. Essentially identical doses are suggested. Quantities of 1 Gm. (15 grains) of oil of wintergreen are repeated every hour or two until "maximal permissible amounts"

are given, from 6 to 8 Gm. being required to induce symptoms indicative of the limit of tolerance. Salicylates and closely related compounds have a widespread use as analgesics and antipyretics; and they are among the drugs that the laity not infrequently ventures to employ in self-medication. Where this degree of "familiarity" occurs, dangers of improper use always exist. This is clearly emphasized in a recent report of Wetzel and Nourse<sup>2</sup> indicating, what does not seem to be generally recognized, that methyl salicylate in moderate amounts is a powerful poison. While deaths due to this drug have never resulted from its therapeutic use, instances of untoward effects following accidental or intentional self-administration have been reported. In reviewing the known cases, Wetzel and Nourse ascertained that fatal poisoning may be produced by relatively small amounts of methyl salicylate. Absorption of less than 15 cc. has repeatedly resulted in death. The unexpected toxicity of this drug may be ascribed in part to its comparatively greater lipoidal solubility and in part to the fact that it suffers less destruction within the body after its absorption, when compared with salicylates. In view of the foregoing circumstances, Wetzel and Nourse believe that the therapeutic use of methyl salicylate should be confined to external administration in the form of a liniment or an ointment; and they point out that Sollmann believes this mode of administration is sometimes more effective than when the drug is given internally. From the standpoint of public welfare, the conclusions of the Cleveland clinicians deserve repetition: Access to oil of wintergreen should be made impossible for children and for persons ignorant of its poisonous properties. A further danger exists in the form of the extract and the spirit of wintergreen, both of which may be in demand because of their alcohol content.

—*Jour. A. M. A.*, May 22, 1926.

<sup>1</sup>Useful Drugs, prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago, American Medical Association, 1925.

<sup>2</sup>Wetzel, N. C., and Nourse, J. D.: *Wintergreen Poisoning*, Arch. Path. and Lab. Med. 1:82 (Feb.) 1926.